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› Runleader RL-BI025BC LCD Battery Level Indicator and Multi-Function Gauge User Manual

Runleader RL-BI025BC

Runleader RL-BI025BC LCD Battery Level Indicator and Multi-Function Gauge User Manual

Model: RL-BI025BC

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of the Runleader RL-BI025BC LCD Battery Level Indicator and Multi-Function Gauge. This device is designed to monitor battery level, operating hours, and voltage for various battery types, including Lead Acid, LiFePO4, Gel, Trojan, and AGM, across 12V to 48V systems. It also features CAN communication capabilities.



Image 1.1: Front view of the Runleader RL-BI025BC LCD Battery Level Indicator.

2. SAFETY INFORMATION

Please read and understand all safety warnings before installing or operating the device. Failure to follow these instructions may result in damage to the product or personal injury.



Image 2.1: Safety warnings regarding fire and child safety.

- Keep the device away from fire sources.
- Keep the device out of reach of children and infants.

3. KEY FEATURES

- **Battery Level Indicator:** Displays remaining battery power via LCD progress bars, suitable for Lead Acid, LiFePO4, Gel, Trojan, and AGM battery types.
- **Maintenance Hour Counter (TOT & SVC):** Records total operating hours (0 to 999,99 hours) and allows programming of initial hours for replacement meters. Features a service timer (5-2000 hours) for maintenance scheduling.
- **Volt Meter Gauge:** Monitors real-time battery output voltage with configurable over-voltage (12V to 60V) and under-voltage (8.5V to 59V) alerts.
- **CAN Communication:** Battery power values can be transferred via CAN frame (SId ID: ID0X18FF0b50, Eld ID: ID0X201) for short-distance communication.
- **Backlight:** White backlight for visibility in low-light conditions, with options for always-on, off, or automatic mode. Red backlight indicates low battery status or voltage exceed/lack.
- **Durable Design:** Water and shock resistant with IP67 rating, constructed with 100% epoxy resin craft.
- **Easy Installation:** Designed for drill-in and snap-in mounting with a panel cut-out size of 44.5x44.5mm (1.75x1.75 inches).

4. SPECIFICATIONS

Specification	Value
Model Number	RL-BI025BC
Product Dimensions	2.54 x 2.54 x 1.44 inches
Item Weight	4.59 Ounces
Material	Polycarbonate (PC)

Specification	Value
Voltage Range	12V to 48V DC
Hour Range	0 to 999,99 hours
Service Timer Range	5 to 2000 hours
Over-voltage Reminder Range	12V to 60V
Under-voltage Reminder Range	8.5V to 59V
Panel Cut-out Size	44.5 x 44.5 mm (1.75 x 1.75 inches)
UPC	728062433207

5. INSTALLATION

Proper installation is crucial for the accurate operation of the gauge. Follow these steps carefully.

5.1 Panel Mounting

The gauge is designed for drill-in and snap-in mounting. A panel cut-out of approximately 60.5mm (2.38 inches) diameter is required.



Image 5.1: Diagram illustrating panel cut-out size and snap-in mounting.

5.2 Wiring Connections

The device uses a connection port for various functionalities. Ensure correct wiring for proper operation.

- **Direct Power Connection:** Connect the gauge directly to the power source.
- **Key Switch Power Connection:** Integrate a key switch for power control.
- **CAN Communication Connection:** For CAN data transfer, connect the CANL and CANH lines to your ECU.

Note: You must connect "Port 3" with port "+" to display the correct battery power progress bars.

6. OPERATION

6.1 Battery Power Percentage Display

The gauge provides a real-time display of battery power. The LCD progress bars indicate the remaining charge, with each bar representing 10% of battery power.

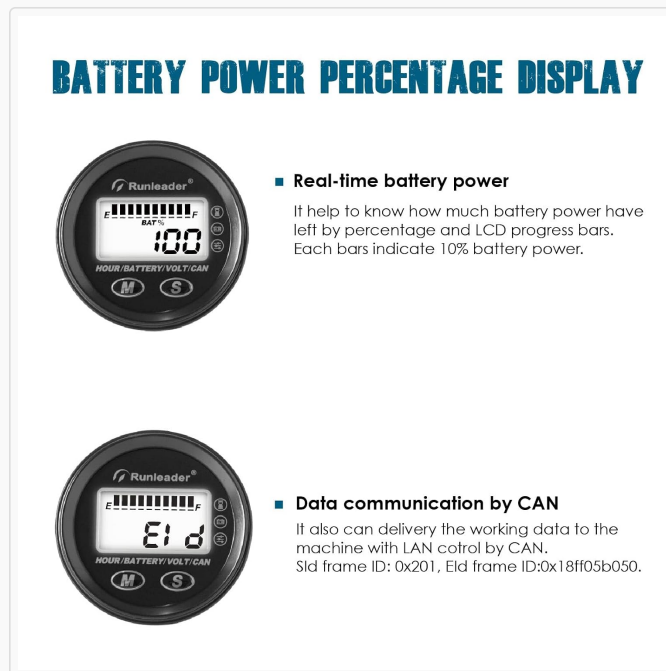


Image 6.1: Display showing battery power percentage and CAN communication status.

6.2 Hour Counter (TOT & SVC)

The gauge tracks total operating hours (TOT) when connected to power. You can set initial hours for new meter replacements. The Service (SVC) timer helps schedule regular maintenance tasks by counting down. A red backlight and flashing values will alert you when the service interval is due.

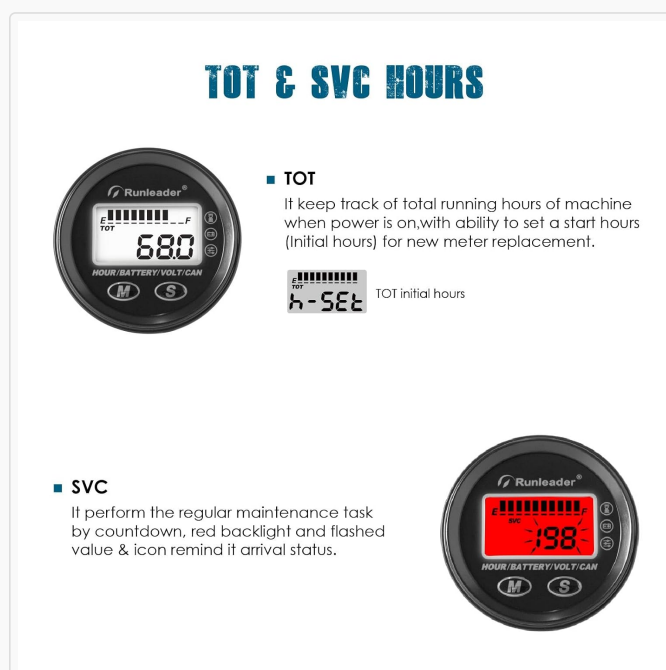


Image 6.2: Display showing total operating hours (TOT) and service countdown (SVC).

6.3 Battery Voltage Measurement

The gauge continuously measures and displays the battery's output voltage. It features configurable alerts for both over-voltage and under-voltage conditions. If the voltage exceeds or falls below the preset thresholds, the display will indicate an alert.

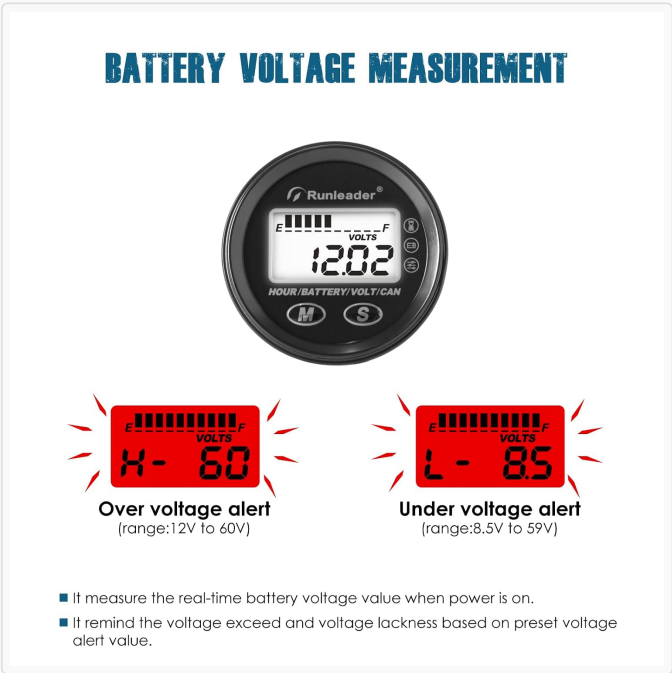


Image 6.3: Display showing real-time voltage and examples of over-voltage (X-60) and under-voltage (L-8.5) alerts.

6.4 CAN Communication

The device supports CAN communication, allowing battery power values to be transmitted via available CAN frames (SId or ElId) for integration with other systems over short distances.

7. PROGRAMMABLE SETTINGS

The Runleader RL-BI025BC allows users to program specific battery types and voltage ranges to ensure accurate readings.

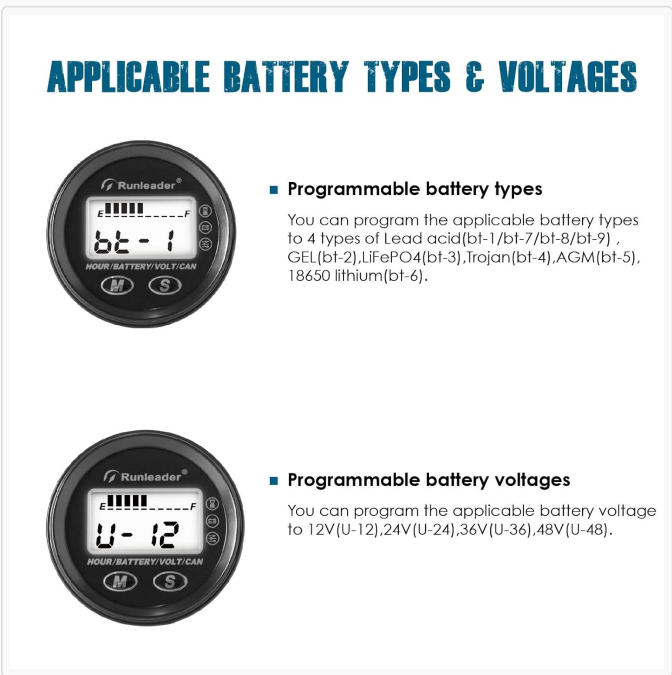


Image 7.1: Display showing programmable battery types (e.g., bt-1 for Lead Acid) and voltages (e.g., U-12 for 12V).

7.1 Programmable Battery Types

You can program the gauge for various battery types:

- Lead Acid (bt-1 / bt-7 / bt-8 / bt-9)
- GEL (bt-2)
- LiFePO4 (bt-3)
- Trojan (bt-4)
- AGM (bt-5)
- 18650 Lithium (bt-6)

7.2 Programmable Battery Voltages

The applicable battery voltage can be programmed to match your system:

- 12V (U-12)
- 24V (U-24)
- 36V (U-36)
- 48V (U-48)

8. MAINTENANCE

The Runleader RL-BI025BC is designed for durability and minimal maintenance. Its IP67 waterproof rating ensures protection against water ingress.

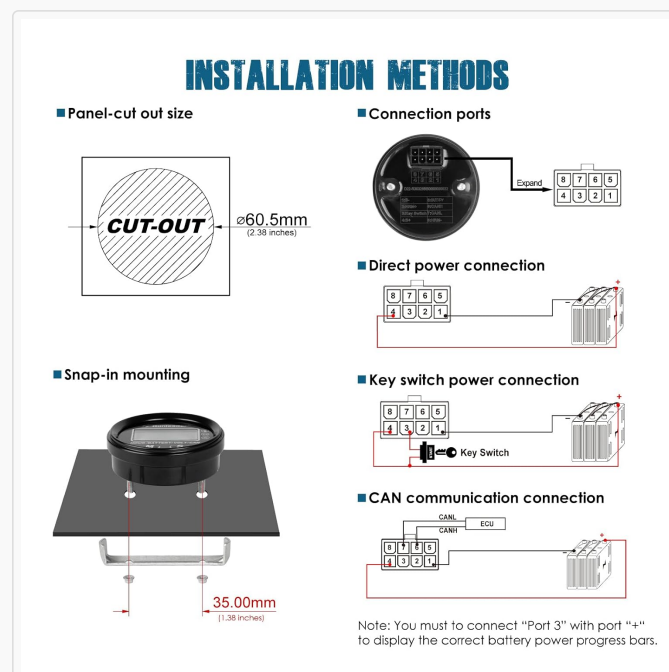


Image 8.1: Illustration of the device's IP67 waterproof rating.

Regularly check connections for security and cleanliness. Clean the display with a soft, dry cloth. Avoid using abrasive cleaners or solvents.

9. APPLICATION

The Runleader RL-BI025BC is suitable for a wide range of DC 12V to 48V powered equipment utilizing Lead Acid, GEL, LiFePO4, Trojan, AGM, or 18650 lithium batteries.

APPLICATION

It can be worked on DC 12V to 48V Lead acid,GEL,LiFePO4, Trojan,AGM,18650 lithium powered equipments,such as:

- Golf cart
- Forklift
- Motorhome
- Lawn mower
- Leaf trimmer
- Scrubber machine etc.



Golf cart



Forklift



Motorhome



Lawn mower



Leaf trimmer



Scrubber

Image 9.1: Examples of equipment where the gauge can be used.

- Golf carts
- Forklifts
- Motorhomes
- Lawn mowers
- Leaf trimmers
- Scrubber machines
- Electric cars

10. INCLUDED ACCESSORIES

The following items are typically included with your Runleader RL-BI025BC gauge:

DIMENSION & ACCESSORIES

Dimension



Accessories



Runleader color box*1



User manual*3



Cut-out sticker*1



Connector wiring*1



Connector spring*8



Connector plug*1



Mounting bracket*1



M4 Flange nut*2

Image 10.1: Diagram showing product dimensions and a list of included accessories.

- Runleader color box x1
- User manual x3
- Cut-out sticker x1
- Connector wiring x1
- Connector spring x8
- Connector plug x1
- Mounting bracket x1
- M4 Flange nut x2

11. WARRANTY AND SUPPORT

The Runleader RL-BI025BC comes with a **2-year warranty**. For technical support or warranty claims, please refer to the contact information provided in the packaging or on the official Runleader website.

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Question

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Details

Model number, symptoms, what you tried, or the section of the manual you are using.

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